
Determinants of Households Saving Behavior: Case of East Gojjam Zone, Ethiopia

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ABSTRACT

Resource accumulated in the form of capital and available for current and future investment is the foundation of economic growth. Saving is one of the best mechanisms of accumulating capital. The main purpose of this study is to investigate determinants of household saving behavior living in rural and urban areas. The study was conducted in East Gojjam Zone of Amhara regional state of Ethiopia. Respondents were selected through two stage-sampling techniques, and 400 households were participated in the study. Primary data was collected from household heads by implementing household survey with in similar time interval. The collected data was analyzed using odd ratio logistic regression model. The findings of the study show that most households save their income, and personal saving habits of household head, the existence of financial planning and annual income of household determine the saving behavior of households. To improve the saving practice of household continuous training should be delivered concerning how to develop and implement financial planning, adopt positive personal saving habits and effectively manage earnings.

Key words: *Saving behavior, households, planning, logistic model, Ethiopia.*

1. Introduction

The motive of many countries' economic policy is maintaining stabilized and sustainable economic growth. The Ethiopian government has been undertaking different actions to ensure the country's economic growth. For instance, the first and second five years growth and transformation plans (GTP) are mentionable. The ultimate goals of these plans are to transform the agriculture sector leading economy in the country to industrialization in coming decades. The transformation, however, requires intensive capital accumulation and investment in infrastructures, educations, agriculture, science and technology, business and financial institutions. Thus, resources accumulated in the form of capital available for current and future

investment are the foundation of economic development. Saving is one of the best mechanisms of accumulating capital.

In Ethiopia like other countries, households are prone to adverse shocks such as bad weather events, pest and downward in the price of agricultural output compared to the expenses of agricultural inputs. In addition, economic fluctuations, climate risk, small credit and insurance market, and weak social security coverage leave households vulnerable to severe hardship in developing countries (Abdelkhalek, *et al.*, 2009). In this context, a household saving is a crucial means of providing an insurance against the economic and social shocks. Likewise, savings at the household level are important for the welfare of family members in the course of economic development as a means to smooth income, to fund education and health for old age support when members become non-earners, and to leave as bequests to children. Additionally, a better practice of households saving behavior could develop the potential to finance investments (Girma *et al.*, 2013; Kifle, 2012; Abdelkhalek, *et al.*, 2009).

Despite the important roles of saving in economic development process at a country level or household level in developing nations in general and in Ethiopia in particular, very few studies have been conducted on saving behavior. In line with this, the motive of this study was to investigate the factors that determine the saving behavior of urban and rural households (here after referred to as households).

2. Statement of the problem

Saving is a driving force of economic success and stability. Domestic household saving have become a major contributor to a country's economic success (Chenge *et al.*, 2006). However, household saving practice and culture in Ethiopia is very low and found at worst level as compared to the saving rate of developed countries households (Aron *et al.*, 2013; Girma *et al.*, 2013). In addition, no adequate practice has been performed to educate the community about saving behavior. This was happened due to lack of adequate empirical result about the public savings practice and factors hindering the public to save.

Even though there is full consideration of domestic savings contribution to economic reform, no adequate researches have been made in this area. Regarding to empirical studies (Girma *et al.*, 2013) analyzed the determinants of the saving behaviors among rural households in East Hararghe Zone and (Kifle, 2012) has investigated the determinants of saving behavior of cooperative member households in Tigray region of Ethiopia. A common characteristic of these empirical studies is their employment of data obtained from rural households and cooperative members only. The saving practices of urban households and non-member of cooperatives were not addressed by these studies. Furthermore, (Tsega and Yemane, 2015;) assessed the knowledge, practice and factors affecting households saving behavior in North Gondar zone using survey data obtained from three districts and (Aron *et al.*, 2013) examined households' saving culture in Ethiopia taking households sample from three towns. These empirical researches have similar characteristics of using simple descriptive statistics analysis. Simple descriptive statistics might fail to find out the complete attributes of households saving behavior due to its complexity. Therefore, this research filled the previous literatures gap by employing inclusive sample size and more advanced data analysis tool- the logistic regression model.

3. Research Questions

There are many questions concerning household saving behavior remain unclear yet. This research was conducted to answer the following basic questions in the study area.

- How socio-demographic variables affect household saving behavior in East Gojjam zone?
- Does household living area matter household saving practices?
- Does sound financial plan determine household saving practice?
- How household head annual income and work type determines household saving practice?

4. Objectives of the study

The general objective of this study was to investigate the basic determinants of household saving behavior living in rural and urban areas of East Gojjam zone of Amhara region. Specifically, the research was conducted to achieve the following objectives.

- Analyzing the effect of socio-demographic variables on household saving behavior.
- Investigating the consequence of living area on households saving practice.
- Analyzing the effect of financial planning on household saving behavior.
- Investigating the consequence of income and work type on household's saving rate.

5. Significance of the study

This study has far-reaching significances in empirical investigation of household saving behavior and economic development. The study findings help to understand the saving behavior of households; provide empirical evidence about households saving behavior that can be used to design policy and teach the community; and contribute to previous literature gap by developing a conceptual understanding of saving behavior of households.

6. Related Literature Review

To identify the major determinants of household saving behavior, this study focused on four comprehensive independent variables. The socio-demographic characteristics of household head were the first variable. Household's head age, marital status, educational level, dependency ratio, gender of the household, and personal saving habit of the household head were considered in this variable. Various studies have been conducted in developed economy to understand the effects of socio-demographic variables on saving behavior of households. According to (Gedela, 2012; Callen and Thimann, 1997) males have better saving behavior than females because males have a higher level of financial knowledge, financial skills, and perceived earlier childhood consumer practices than females. To the contrary, (Abdelkhalek *et al.*, 2009) concludes Moroccan women were more savers than Moroccan men were. Aktas *et al.*, (2012) suggest that female labor participation on household's working activities can significantly affects the household's saving rate and a household with greater share of working female has higher saving rate. Regarding education status an individual with a higher education level is twice more likely to be saving money than an individual with a secondary education level (ACT Research, 2011). According to this research report, variables such as age of the household and marital status have no significant statistical effect on the decision to save or not to save. In contrast to this finding, (Gedela, 2012), concludes the saving behavior of household is not affected by educational status of the household head.

In addition to the above demographic variables, personal saving habits of households were also studied. Personal saving habit of a particular household can be positive or negative. Positive personal saving habit by far includes manner of regularly managing income by putting money aside from the monthly income, spending money in systematic manner through planning, designing the means of managing unexpected expenses, feeling about family future and shield him/herself from adduction and so on. Whereas negative personal saving habit includes not regularly manage money or earned income, spending the major part of income as it is obtained, not taking in account of unforeseen expenses, spending money without plan, not feeling about family future and so on. These concepts reflect the personality of individual household head. Personality refers to the characteristics of a person that account for consistent patterns of feelings, thinking, and behaving (Pervin *et al.*, 2005, p. 6). In this study, personality was used in terms of saving habit. ACT Research (2011) suggests unsystematic and unplanned saving behavior significantly hinders the motive to save.

On the other hand, the saving behavior of a particular household can be affected by the dependency ratio of that household. Dependency ratio refers to the proportion of number of individuals living without any source of income with particular household to the total number of member of that household. A household with larger family size or dependency ratio saves less amount of its income due to higher household consumption (Gedela, 2012; Aktas *et al.*, 2012; Rick, 2010; Abdelkhalek *et al.*, 2009).

Income and work type of household head are the second independent variable. The study conducted by (Abdelkhalek *et al.*, 2009), in its first estimation took into account the income and household size as explanatory factors. As expected, income was the important determinant of household saving behavior. They found that saving rate depends positively on household income in rural and urban areas. Furthermore, the study conducted in Tribal concluded that income is the crucial determinant of household saving. The saving level of household increases as the percentage of income amount increases (Gedela, 2012). On the other hand, when individual income decreases it tends to decrease both current consumption and saving (Rehman *et al.*, 2011). Furthermore, the work status of household also determines its saving level. An employed individual saves more likely than an unemployed individual does (Aktas *et al.*, 2012; ACT Research, 2011). Thus, saving is the function of income

The third important factor that could determine the saving behavior of household would be household living area-either in urban or rural area of the country. Explicitly, distinguishing the saving style and behavior between urban and rural area is very important, because the access to formal financial institution, living style, ownership of particular thing that has market value, access to information, and the access to take saving advantage have significant difference between rural and urban area. While the determinants of saving behavior are compared across rural and urban area, the factor, which is statically significant in rural area, does not work similarly for urban area (Abdelkhalek *et al.*, 2009).

Financial plan of household to match consumption with saving was the fourth factor. Financial planning is the process of making a reasonable decision about effective use and management of income in the future. According to the inter-temporal income-smoothing motive of savings, people want to smooth their income and consumption over their lifetime (Arent, 2012). The concern about smoothing the earned income across consumption and saving requires sound financial plan and people plan about future expectations or actions. Therefore, the plan and awareness about

future expectation may influence the decision of people to save or not to save. In addition, (Lim *et al.*, 2010) concluded that the attitude or life expectation and planning horizon of household affect the level of their saving. Accordingly, those respondents who are optimistic about their life expectancy and those who have longer or more than one-year planning horizon was more saver than those pessimistic about their life expectancy and have short term planning horizon.

7. Methodology

The study was held in East Gojjam Zone, Amhara Regional State of Ethiopia. Its total land area is 14,009.75 km². It has four administration towns and sixteen rural districts. The proposed total population size living in the zone is 2,494,324 of which 14.21% are living in urban areas and 85.79% are living in rural districts (Amhara Nation Regional State (ANRS), 2014).

Sampled households were identified by implementing two stage-sampling techniques. First, households living in rural and urban districts were included in the research after the study areas were purposively selected based on their population size. Accordingly, three most populated rural districts (such as Hulet Eju Enesie, Enarji Enawga & Goncha Siso Enesie) and two most populated urban administrations (namely Debre Markos & Mota) were selected.

The number of population living in these selected areas is about 782,361 people (ANRS, 2014). Using the average family size of Ethiopian households as indicated by the Central Statistics Agency (CSA) (2010), which stands at five members per family, the total number of households in the selected study area is estimated to be 156,472 households. This number was arrived by dividing the total population of the study area (782,361) by the average household size, which is five, and it was the target population of the study.

Second, the specific dwelling areas of each respondent were also purposively selected based on their access to transportation facilities and easiness for data collection. Accordingly, fifteen provinces were purposively sampled from the rural districts whereas five provinces were selected from the urban administrations. The next step had to do with the selection of respondent households from the sampled provinces. In each selected provinces, simple random sampling technique was employed to select respondent households. The number of respondent household heads taken from each sampled provinces were determined based on proportion of provinces of sampled areas.

Regarding to the sample size of respondents, 400 households were sampled from both areas (such that 250 households from rural districts and 150 households from urban areas). The sample size was determined using (Yemane, 1967) simplified sampled size determination formula at 95% confidence level. Therefore, the sample size of this research was,

$$n = \frac{N}{1+N(e^2)}$$

$$n = \frac{156,472}{1+156,472(0.05)^2} = 399.80 \cong \mathbf{400} \text{ households.}$$

For each selected study areas, the number of respondents to be taken was distributed based on the proportional number of selected provinces. Accordingly, 100 (40%), 68(27%) and 82 (33%) households were taken from Hulet Eju Enesie, Enarji Enawga and Goncha Siso Enesie districts respectively. On the other hand, 90 (60%) and 60 (40%) respondents were taken from Debre Markos and Mota towns respectively.

Dependent and Independent Variables

Household saving behavior was the dependent variable for this study. The household saving behavior was a dummy variable with binomial outcomes- yes or no. Respondent's opinion was represented by binary options such that it takes "1" if the respondent saves from his/her income and "0" if the respondent does not save from his/her earnings.

This study was focused on four comprehensive independent variables that might affect the saving behavior of households. These were :(1) social-demographic characteristics of household that includes household head's age, marital status, educational level, gender, personal saving habit, and family dependency ratio, (2) income and working type of household head, (3) household living area, and (4) financial planning of household to match consumption with saving. It should be noted that the data for both independent variables and dependent variable were acquired from households included in sample through questionnaire.

Model Specification

The collected data were analyzed using logistic regression model run on STATA 12. It is obvious that logistic regression model is used when the dependent variable is a binary variable type. It is used to predict the likelihood of whether a dependent variable is present or not through logistic transformation. The following logistic regression model was formulated after dependent variable measure probability is restated into odd ratio and then the ratios are transformed into logit value using the maximum likelihood method. Thus,

HSB = {1 if the household does save his/her income, 0 otherwise}

Mathematically the probability of household head to save (p_{HSBi}) in logistic regression is defined by odd ratio as:

$$Odd_{HSBi} = \left(\frac{p_{HSBi}}{1 - p_{HSBi}} \right)$$

$$= e^{\beta_0 + \beta_1 HAGE + \beta_2 AGESQ + \beta_3 HGEN + \beta_4 MART + \beta_5 EDU + \beta_6 DPEN + \beta_7 PSO + \beta_8 INCO + \beta_9 WORK + \beta_{10} LIVE + \beta_{11} PLAN}$$

Where,

HSB_i = Household saving behavior - a binary variable assessing whether the respondent does save from his/her income with 1 for yes, and 0 for no.

$HAGE$ = Household head's age

$HGEN$ = Household head's Gender (0 = Male, 1 = Female)

$MART$ = Marital status (1= Single, 2 = Married, 3= Divorced/widowed)

EDU = Educational level of household head (1= Illiterate, 2 = 1-12th grade, 3 = Diploma, 4 = 1st degree, 5 = Above 1st degree).

$DPEN$ = Dependency ratio (= number of dependent (without any earnings)/total number of family).

PSO = Personal saving habit of household head (1 = Positive, 0 = Negative)

$INCO$ = Annual income of household

$WORK$ = Work type of household head (1 = self employed, 2 = government employee, 3 = Private org. employee, 4 = NGO employee, 5 = Farmer, 6 = Retired, 7 = Engaged on more than one).

$LIVE$ = Living area of household head (1 = Urban, 0 = Rural)

$PLAN$ = The existence of household financial planning to match saving with its consumption (1 = Yes, 0 = No)

e = Exponential function

β_i = Coefficient of independent variables

8. Data Analysis and Discussion

In this study, 400 household heads were participated of which 21% were women and 79% were men. These figures show low participation of female household heads in the study as compared to male household heads since they have less opportunity to become household head in the study areas. The average age of household head was 37 years with 20 minimum and 70 maximum years, however, larger share of household head found in between 20 - 30 years that is 40%. This implies most respondents were at their young age followed by 31 - 40 years that is 24%. Regarding to respondents' annual earnings, almost all household heads (87%) had less than Br¹. 50,000 annual income. The average annual income of household head was Br. 33,697 with Br. 3,160 minimum and Br. 240,000 maximum annual income. The variation of household head's annual income from the mean was Br. 23,496. Most household heads were married (77%) followed by unmarried household head which was 19% of the total. Almost half of the respondents did not attend formal education at school. About 48% household heads were illiterate followed by 20% household heads having first degree and the rest have below first degree. Concerning the respondents' work type, all household heads included in this study had their own work at the time of data collection and most of them were farmers-share about 55% followed by government employees which were 31% of respondents.

As it was mentioned in methodology section, logistic regression model was employed and log likelihood odd ratio used to identify the determinants of households' saving behavior. The model is sufficiently very significant in general (p-value = 0.0000).

Table I: Household Saving Behavior Logistic Regression Output

| Independent variables | Odd ratio | Std. err. | p-value |
|-----------------------------------|-----------|--------------------------------|---------|
| HAGE | 0.993 | 0.1392 | 0.649 |
| HGEN | 1.000 | 0.3211 | 0.998 |
| MART | 1.140 | 0.3917 | 0.702 |
| EDU | 1.077 | 0.1700 | 0.636 |
| LIVE | 1.024 | 0.4880 | 0.960 |
| DPEN | 0.667 | 0.4090 | 0.510 |
| PSON | 5.104 | 1.4598 | 0.000** |
| WORK | 0.885 | 0.1340 | 0.422 |
| PLAN | 8.100 | 3.7158 | 0.000** |
| INCO | 1.000 | 0.000 | 0.000** |
| Constant | 0.061 | 0.0759 | 0.024 |
| No. of obs. = 400 | | Psuedo R ² = 0.2508 | |
| LR Chi ² (10) = 128.29 | | Log likelihood = -192.59 | |
| Prob > chi ² = 0.0000 | | **Significant at p < 0.05 | |

¹ Br. is the abbreviated form of Ethiopian Currency that is Birr.

Socio-demographic characteristics of respondents were one of the proposed independent variables as determinant of household saving behavior. Unfortunately, none of these variables determines household saving behavior except personal saving habit of household head. Thus, household head's age, gender, marital status, educational level, and dependency ratio do not determine household head to save or not to save his/her income in the study areas. This conclusion contradicts the findings of previous studies (Gedela, 2012; Aktas *et al.*, 2012; ACT Research, 2011; Rick, 2010; Abdelkhalek *et al.*, 2009; Callen and Thimann, 1997) but it is consistent with (Gedela, 2012) conclusion regarding to educational level and (ACT Research, 2011) regarding to age and marital status.

Personal saving habit of household head, however, significantly affects the household saving practices. There is positive and significant relationship between personal saving habit and saving practices of household. The probability of household head with positive personal saving habit is very high (0.84) to save than with negative personal saving habit. This finding supports the conclusion of previous study (ACT Research, 2011). Lack of positive personal saving habit significantly harms the desire of households to save by engaging them in extravagant events. Because household head with positive personality regularly manages income, spends reasonably through planning, rigorously manages unexpected expenditures, thinks about family future, and protects himself/herself from adductions.

The household head living area was other independent variable expected to affect its saving behavior. The living area was categorized as rural and urban districts. According to the result of this study, there is no significant relationship between household saving behavior and household head living areas. This finding is inconsistent with the preceding research findings (Abdelkhalek *et al.*, 2009). The reasons for these contradictory conclusions might be due to the current similar awareness of saving and better access to financial institutions between rural and urban households in the study areas.

The other important independent variables of this study were household head's annual income and work type. Household heads participated in this study were engaged on different work type and they had different work status. However, households working type does not determine households saving behavior. On the other hand, household heads' annual income has statistically positive and significant effect on saving behavior. As a result, household head's annual income determines household decision either to save or not to save. Thus, household with high annual income saves more than household has less annual income. This finding is consistent with previous studies (Gedela, 2012; Abdelkhalek *et al.*, 2009).

This study was designed to analyze also the effect of financial planning on household saving behavior. Financial planning has positive and significant effect on households saving behavior. The probability of household to save with financial planning is much higher (0.89) than household without financial plan.

Financial planning is one of the important aspects of household saving behavior in which the household draws a roadmap for implementation of various activities in the future. At household level, financial planning may encompasses various future family decisions such as how to finance day-to-day activities and life, assure family security and health, improve living standard, take investment opportunities, acquire basic needs, respond to unnecessary expenditures, and so on. It leads household in appropriate manner of money utilization by keeping them away from unreasonable expenditures. Households with a good financial plan have less chance of exposure

to extravagancy. It is possible to reduce household's day-to-day expenditures through well developed financial planning. Financial planning enables households to improve saving possibility by reducing extravagancy through appropriate and effective management of earnings. Good household saving behavior requires the existence and implementation of well designed financial planning.

9. Conclusion and Recommendation

The desire of household to save was significantly determined by the personal saving habits of the household head; existence of financial planning; and annual income of the household. Household head with positive personal saving habits has more probability to save than household head with negative personal saving habits. In addition, the existence of financial planning significantly increases the desire of households to save. Given the household head's personal saving habits and existence of financial planning, household with high annual income has high probability to save than household with low annual earnings.

To improve the saving behavior of households in the study areas, the households should be able to avoid negative personal saving habits that may impair its saving behavior and adopt good saving practices even at small amount of income. Each household should develop and implement financial planning each year for its day-to-day activities.

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